Name of the Factory	: SPEEDWELL APPARELS LTD.
Address of the Factory	: 937, Zajar, P.O. National University, Gazipur
Present Status of the Factory	: Under operation.
Structural Assessment Conducted by	: TUV
Date of Structural Inspection	: 9th February, 2015
Fire Assessment Conducted by	: TUV
Date of Fire Inspection	: 9th February, 2015
Electrical Assessment Conducted by	: TUV
Date of Electrical Inspection	: 9th February, 2015
BKMEA Membership No.	: 1863

BASIC INFORMATION:

The factory building is a three storied RCC building with beam and column system and flat slab system. The following information was noted:

i.	Building Usage Type	: Garment Factory.
ii.	Structural System	: MS profile shed.
iii.	Floor System	: Ground Floor.
iv.	Floor Area	: The typical plinth area is 11,000sft. and total production floor is11,000.
v.	No. of Stories	: Single storied shed
vi.	Construction Year	: 2011.
vii.	Foundation Type	: Not Identified.
viii.	Design Drawings	: Not Available.
ix.	Soil Investigation Report	: Not Available.
x.	Construction Materials	: Brick masonry structure.
xi.	Generator	: Adjacent to the main entrance of the factory.

RECOMMENDATIONS FOR CORRECTIVE ACTION:

The recommendations of corrective action for both Structural and Fire & Electrical Safety comprises in Short Term, Mid Term and Long Term basis.

The recommendations for **Structural Safety** corrective action are:

Short Term (Immediate)	: N/A
Mid Term (6-weeks)	: 1. As built architectural and engineering drawing to be prepared and submitted for approval by appropriate authority. As part of this process building engineer will be required to make a number of check on the structural design as described in the following recommendations.
Long Term (6-months)	: 1. The connection of steel structure needs to be checked by building engineer and the purlin bracing system is required to ensure the stability of the structure.

The recommendations for **Fire & Electrical Safety** corrective action are:

(A): Recommendations for Fire Safety Corrective Actions:

Immediate (*the factory should not continue to be occupied until these non-conformities have been rectified*):	N/A
Short Term (*Actions that must be incorporated into a Fire Safety Management Plan immediately (1 ~ 2 weeks) and should be a regular activity*	• The egress paths should be illuminated with emergency lighting with power back-up supply & illumination should be a minimum of 10 lux for all corridors & exit doors. Aisles should be provided with a minimum 2 lux. • The factory should be periodically checking of alarm call point, alarm & detection system & maintained the record properly. • The hose pipe performance should be checked periodically and properly tagged. • Remove combustible materials from (height up to) electrical heat source. • Fire drill should be conducted quarterly (4 times a year) in existing buildings as detailed under the Fire Safety Plan & maintained the record properly. • Fire safety training should be conducted quarterly (4 times a year) in existing buildings as detailed under the Fire Safety Plan & maintained the record properly. • Provide firefighting training for minimum 25% of workers from external fire safety agency. • The updated evacuation plan should be posted at all exit way.
Mid Term (*The remedial works indicated must be carried out within a period of 6 weeks)*	• Replace all existing doors on evacuation routes, exit doors, which are collapsible / sliding gates and end shutters in egress route with side hinged type door, which swing outward of the room or in the direction of travel. Swinging of the door should not be constricting the width of the corridor / passage below 0.9 meter. • Remove all locking device from all egress door. All exit doors should be open-able from the side they serve without the use of a key. • Provide fire rated barrier with fire rated self closing door at generator room. • All high risk room is required to enclose by fire rated construction/barrier with fire rated self closing door for fire separated from the rest of the operational area. • Provide automatic detection system with automatic fire alarm. • Install additional nos. of manual activation call point at all exit route of the building.

	• An automatic alarm system must be provided throughout the factory; the alarm must be automatically triggered on detection of a fire. • Provide adequate nos. of smoke detectors to cover the whole factory building. • Replace existing 1 inch hose pipe replace with 1.5 inch hose pipe to meet the requirement of RMG guideline. • Stand pipe supplying first aid hose should have minimum pressure of 200 KPa. • Factory building approval should be approved from proper issuing authority. • Visual fire alarm should be place at generator room.
Long Term (*The remedial works indicated must be carried out within a period of 6 months)*	• The fire pump should be so designed that it should satisfy the required pressures and flow for firefighting equipments at the highest and most remote part of the protected premises during their peak demand hour or for roof storage tank. The pump should be housed in a readily accessible position in a building of non combustible construction. The pump should be adequately protected against mechanical damage. A manually controlled pump may be used to feed water into gravity overhead tank with fire reserve. There should be provision for standby fire pump driven by a compression ignition (diesel) engine or electric pump with own generator. • Provide dedicated water stored in storage tank for firefighting operation comply with the requirement of RMG guideline table 3.1 and not to be used for other purposes.

(B): Recommendations for Electrical Safety Corrective Actions:

Immediate (*the factory should not continue to be occupied until these non-conformities have been rectified*):	N/A
Short Term (*Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity*	• Provide proper separate earthing/grounding to generator. Ensure that generator body frame to have two separate and distinct connections to the earth / ground.
Mid Term (*The remedial works indicated must be carried out within a period of 6 weeks)*	• Provide rubber mats in front of all distribution panels. • Install smoke detection and provide firefighting equipment in the substation and generator room. • Provide and maintain clear and legible identifications numbers & names on all incoming and outgoing circuits of HT / LT panels. • Relocate the MDBs with easy access. Ensure that all MDBs /

	SDBs should have easy accessibility. • Provide supports for main service line complete with adequate insulation. • Provide proper clearance of 0.8 - 1.0 m in front of all distribution panels/switchboards. • Provide cable connections with properly soldered / welded lugs at (LT/MDB/DB/SDB)'s. Ensure that all the electrical connections are properly secured with lugs and glands. • Avoid looping and bunch of cable at MCCB/MCB or bus bar terminal, use individual circuit and over current device for every incoming and outgoing circuit at the distribution boards. • Provide circuit diagram /circuit list with proper current ratings and fuse size, marking for DBs identifying end use, voltage, no. of phases. • Seal the cable penetrations though walls adequately with fire resistive elements. • Seal the opening of wall at wiring passing through wall/roof/floor partitions. Ensure that all cable penetrations though walls should be adequately sealed with fire resistive elements. • Provide adequate earthing to body and doors to all MDBs / DBs. Ensure that all electrical panels provided with proper and separate earth potential.
Long Term (*The remedial works indicated must be carried out within a period of 6 months)*	• 1. Provide updated SLD matching the existing installation at the factory. 2. SLD to indicate exact positions of all points of switch boxes and other outlets. 3. SLD to be approved by the engineer-in-charge. • 1. Provide updated Electrical layout drawing prepared after proper locations of all outlets for lamps, fans, fixed and transportable appliances, motors etc. 2. Drawings to indicate exact positions of all points of switch boxes and other outlets to match existing installation. 3. As built drawing to be approved by the engineer-in-charge. • Provide adequate clearance in all sides of main HT/LT panel boards for easy maintenance. • Maintain the minimum height of 3.6 m for the substation room. • Provide 4 hour fire rated walls all around the transformer / generator room on ground level. • Provide adequate cable trenches with non-flammable covers at substation areas. • Modify Area of generator room to meet requirements of Table

	4.4, RMG Guideline; the area should be 58m2. • Provide and maintain proper clearance in all sides of generator for ease of maintenance. • Provide and maintain easy access and proper height of switchboard / panel boards (< 2m from floor level). • Seal the cable entry-exit points of (LT/MDB/DB/SDB)'s with non-flammable materials. In addition: 1. Ensure that HT / LT panels / Switchgears to be vermin / damp proof. 2. Ensure all unused holes / openings in DBs to be blocked properly. • 1. Provide the ECC to meet minimum cross-sectional area as per table 4.5. 2. Ensure that connections between conductors / equipments provided to durable electrical continuity and adequate mechanical strength and protection. 3. The continuous earth connection is provided back to the main intake supply earth. • Provide adequate protection against lightning depending on the probability of a strike and acceptable risk levels.